

Exhibit 3.1

Infringement Claim Chart for U.S. Pat. No. US10237420B1 v. Facebook (“Defendant”)

Claims	Evidence
<p>20. A method of processing requests, comprising:</p>	<p>The Facebook platform with system-generated Searching Service performs a method of processing requests. For Example, Facebook Searching Service receive user request, process them, and provides needed information right at the system. So, it helps you find what you're looking for and stay in control of what you see.</p> <div style="border: 1px solid green; padding: 10px;"> <p>You can search for people, posts, photos, videos, places, Pages, groups, apps, links, events and more on Facebook. Facebook search results are based on your Facebook activity. Facebook search results aren't influenced by activity off Facebook.</p> </div> <p>Source: https://www.facebook.com/help/113625708804960</p> <div style="border: 1px solid green; padding: 10px;"> <p><u>Delivering personalized ads maximizes value for both people and businesses. It helps businesses reach customers affordably, grow and create jobs, and provides people a better experience. Our latest Good Questions, Real Answers post will help you understand how Facebook delivers this value through ad auctions that use machine learning to determine which ads to show to people on our apps.</u></p> </div> <p>Source: https://www.facebook.com/business/news/good-questions-real-answers-how-does-facebook-use-machine-learning-to-deliver-ads</p>


Facebook is a social media network that connects people through an online platform. By sharing content like text status posts, images, videos, and external links like blog posts, Facebook users can contribute ideas and join conversations with other people who share the same or different interests.

Source: <https://blog.hubspot.com/marketing/how-to-use-facebook>

How search works

How do I search for something on Facebook?

Search for something

1. Click  in the top left of any page on Facebook.
2. Enter what you're looking for and choose from the results.

When typing something, you may see predictions for what you're looking for. If you see what you're looking for in these predictions, click it to save time searching.

Source: https://www.facebook.com/help/821153694683665/?helpref=related_articles


estimating at
least one
content-

The Facebook platform with system-generated Searching Service estimates at least one content-specific or requestor-specific characteristic associated with each received request. For Example, Facebook estimates at least one content-specific (i.e., search query

specific or requestor-specific characteristic associated with each received request;

parameters (what the user looking for)) or requestor-specific (user's intent) characteristic associated with each received request.

How usernames and user IDs are used on Facebook Profiles

 Copy link

Username and user IDs are part of your public profile, which can help your friends find you on Facebook. A username is the web address for your profile or Page (e.g. Facebook.com/yourname).

Source: <https://www.facebook.com/help/211813265517027>

Use keywords in search

Search supports keyword searches to help you find what you're looking for on Facebook. When you start searching with keywords (e.g. "Caroline wedding" or "cookie recipe Lisa"), you'll see results that you can filter.

You can also select one of the predicted searches to see a full list of search options for that prediction.




Source: https://www.facebook.com/help/821153694683665/?helpref=related_articles

	<div> <p>Facebook is a social media network that connects people through an online platform. By sharing content like text status posts, images, videos, and external links like blog posts, Facebook users can contribute ideas and join conversations with other people who share the same or different interests.</p> </div> <div> <p>Source: https://blog.hubspot.com/marketing/how-to-use-facebook</p> </div> <div> <h3>How does Facebook use my information to show suggestions in People you may know?</h3> </div> <div> <p> Copy link</p> </div> <div> <p>'People you may know' can help you and your friends connect with other people on Facebook. 'People you may know' suggestions may show you people you might want to add as a friend who you haven't seen on Facebook yet or who may be new to Facebook.</p> </div> <div> <p>'People you may know' suggestions can be friends of friends, people in your network or people you may have something in common with.</p> </div> <div> <p>Source: https://www.facebook.com/help/1059270337766380</p> </div> <div> <p>A user access token is required if you are requesting using only the Request object ID, and want to know about the recipient of the request. The request must have been sent to the person whose access token you are using.</p> </div> <div> <p>Source: https://developers.facebook.com/docs/graph-api/reference/v17.0/request</p> </div>
determining availability of a plurality of	The Facebook platform with system-generated Searching Service determines a set of available alternate target resources, each having at least one respective target characteristic.

alternate target resources, each respective target resource having at least one respective target characteristic;

For Example, Facebook uses natural language understanding technologies to understand what is being requested and on the basis of this, determine resources (content) on the characteristic such as current availability and query matching of the resources.

Find and add a friend on a computer:

1. Click the search bar in the top left of any Facebook Page.
2. Type your friend's name into the search bar and click 
3. To send someone a friend request, click  next to their profile picture. Some people might not have  next to their profile picture, depending on their [privacy settings](#).

Note: You can have up to 1,000 sent requests waiting for a response. If you send more, the oldest request will be deleted.

Source: <https://www.facebook.com/help/www/146466588759199>

What is Facebook Search?

Getting started with Facebook search is easy if you have an account. First, login to your Facebook profile and click or tap on the search bar in the upper left corner of Facebook. As you begin typing a name or a company, Facebook's algorithm will begin suggesting content. These different categories of content will match the words that you typed and they will appear in a drop-down menu beneath the search field.

For example, if you start typing in "powe-" Power Digital Marketing might be one of the first suggestions in the drop-down menu. From there you can click or tap on whichever search result fits what you were searching for. In tech lingo, this is known as "predictive search."

Source: <https://powerdigitalmarketing.com/blog/how-facebook-search-results-work/>

What appears in Facebook search results?

You can search for people, posts, photos, videos, places, Pages, groups, apps, links, events and [more on Facebook](#). Facebook search results are based on your Facebook activity. Facebook search results aren't influenced by activity off Facebook.

Your unique Facebook search results are based on Facebook activity, such as:

- What you're able to see on Facebook, including what your friends share with you.
- Posts from your friends.
- Places where you've been tagged or places similar to those places.
- Things you like (e.g. Pages you follow or interests indicated on your profile).
- Groups you've joined.
- Events you've liked or are interested in.
- Previous searches you've done.
- Content you've interacted with in News Feed.

Source: https://www.facebook.com/help/821153694683665/?helpref=related_articles

Your Facebook search results are also based on Facebook community activity, including:

- Popularity of content for a particular search term.
- How recently something was posted.


Source: https://www.facebook.com/help/821153694683665/?helpref=related_articles

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Source: <https://blog.hubspot.com/marketing/how-to-use-facebook>

How does Facebook use my information to show suggestions in People you may know?

 Copy link

'People you may know' can help you and your friends connect with other people on Facebook. 'People you may know' suggestions may show you people you might want to add as a friend who you haven't seen on Facebook yet or who may be new to Facebook.

'People you may know' suggestions can be friends of friends, people in your network or people you may have something in common with.

Source: <https://www.facebook.com/help/1059270337766380>

The Facebook profile is where your information will live. Your name, photo, hometown, workplace, education history, and so on can all be added to your profile. You can make your profile as public or private as you want by disabling the information you don't want publicly visible.

Source: <https://blog.hubspot.com/marketing/how-to-use-facebook>

Find more friends

You can use People you may know to find friends on Facebook. People you may know suggests friends based on shared friendships, being in the same Facebook group or your common networks. To find more friends to add, you can upload your contacts from your mobile phone or email accounts.

If you're having trouble with adding a friend, learn more about why you can't add someone as a friend.

Source: https://www.facebook.com/help/246750422356731/?helpref=hc_fnav

evaluating,
with at least

The Facebook platform with system-generated Searching Service evaluates, with the automated processor, a plurality of alternate allocations of the respective received

<p>one automated processor, a plurality of alternate allocations of the respective received request with different available targets, according to a ranking dependent on a probabilistic predictive multivariate evaluator, based on the at least one content-specific or requestor-specific characteristic, and the respective target characteristics of the plurality of alternate target resources; and</p>	<p>request with different available targets, according to a ranking dependent on a probabilistic predictive multivariate evaluator, based on the at least one content-specific or requestor-specific characteristic, and the respective target characteristics of the plurality of alternate target resources.</p> <p>For Example, Facebook uses the content-specific or requestor-specific characteristics of the request and the availability and characteristics parameters of the target resources to evaluate a plurality of alternate allocations of the respective received request with different available resources via artificial intelligence techniques such as neural networks and machine learning.</p> <div style="border: 1px solid green; padding: 10px;"> <p>Your News Feed is made up of stories from your friends, Pages you've chosen to follow and groups you've joined. <u>Ranking is the process we use to organize all of those stories so that you can see the most relevant content at the top, every time you open Facebook.</u></p> <p>Ranking has four elements: the available <u>inventory</u> of stories; the <u>signals</u>, or data points that can inform ranking decisions; the <u>predictions</u> we make, including how likely we think you are to comment on a story, share with a friend, etc; and a <u>relevancy score</u> for each story. In the video above, I'll walk you through how it all comes together.</p> </div> <p>Source: https://about.fb.com/news/2018/05/inside-feed-news-feed-ranking/</p>
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How machine learning powers Facebook's News Feed ranking algorithm

Source: <https://engineering.fb.com/2021/01/26/ml-applications/news-feed-ranking/>

Many of the experiences and interactions people have on Facebook today are made possible with AI. When you log in to Facebook, we use the power of machine learning to provide you with unique, personalized experiences. Machine learning models are part of ranking and personalizing News Feed stories, filtering out offensive content, highlighting trending topics, ranking search results, and much more. There are numerous other experiences on Facebook that could benefit from machine learning models, but until recently it's been challenging for engineers without a strong machine learning background to take advantage of our ML infrastructure. In late 2014, we set out to redefine machine learning platforms at Facebook from the ground up, and to put state-of-the-art algorithms in AI and ML at the fingertips of every Facebook engineer.

Source: <https://engineering.fb.com/2016/05/09/core-data/introducing-fblearner-flow-facebook-s-ai-backbone/>

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Source: <https://powerdigitalmarketing.com/blog/how-facebook-search-results-work/>

Delivering personalized ads maximizes value for both people and businesses. It helps businesses reach customers affordably, grow and create jobs, and provides people a better experience. Our latest Good Questions, Real Answers post will help you understand how Facebook delivers this value through ad auctions that use machine learning to determine which ads to show to people on our apps.

Source: <https://www.facebook.com/business/news/good-questions-real-answers-how-does-facebook-use-machine-learning-to-deliver-ads>

	<p>For ads that enter the auction, Facebook selects the top ads to show to a person based on which ads have the highest <u>total value score</u> — a combination of advertiser value and ad quality. We find advertiser value by multiplying an ad's bid by the estimated action rate. This is an estimate of how likely that particular person is to take the advertiser's desired action, like visiting the advertiser's website or installing their app. We then add the <u>ad quality score</u>, which is a determination of the overall quality of an ad. We use machine learning to inform this process, as we explain below.</p> <p>Source: https://www.facebook.com/business/news/good-questions-real-answers-how-does-facebook-use-machine-learning-to-deliver-ads</p>
<p>generating a control signal, by the at least one automated processor, selectively dependent on the evaluating, to control the allocations of the respective received request with the different available targets.</p>	<p>The Facebook platform with system-generated Searching Service generates a control signal, by the automated processor, selectively dependent on the evaluating, to control the allocations of the respective received request with the different available targets. For Example, responsive to the evaluation, Facebook generates a control signal for the allocation of the different available resources. The control signal is selectively dependent on the evaluation in view of other factors such as the overall throughput of the system and the priority and requirements of other concurrent requests.</p> <p>Delivering <u>personalized ads</u> maximizes value for both people and businesses. It helps businesses reach customers affordably, grow and create jobs, and provides people a better experience. Our latest Good Questions, <u>Real Answers</u> post will help you understand how Facebook delivers this value <u>through ad auctions</u> that use machine learning to determine which ads to show to people on our apps.</p> <p>Source: https://www.facebook.com/business/news/good-questions-real-answers-how-does-</p>

[facebook-use-machine-learning-to-deliver-ads](#)

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Source: <https://www.facebook.com/help/113625708804960>

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